

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
10 July 2003 (10.07.2003)

PCT

(10) International Publication Number
WO 03/055361 A1(51) International Patent Classification⁷: **A47G 9/00**(21) International Application Number: **PCT/KR02/02426**(22) International Filing Date:
24 December 2002 (24.12.2002)(25) Filing Language: **Korean**(26) Publication Language: **English**

(30) Priority Data:
 20-2001-0040561 28 December 2001 (28.12.2001) **KR**
 20-2002-0023078 1 August 2002 (01.08.2002) **KR**
 20-2002-0036973 11 December 2002 (11.12.2002) **KR**

(71) Applicant (for all designated States except US): **IBEKS TECHNOLOGIES CO., LTD.** [KR/KR]; 646-2 Naebalsan-dong, Gangseo-gu, 157-280 Seoul (KR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KIM, Young-Jun**

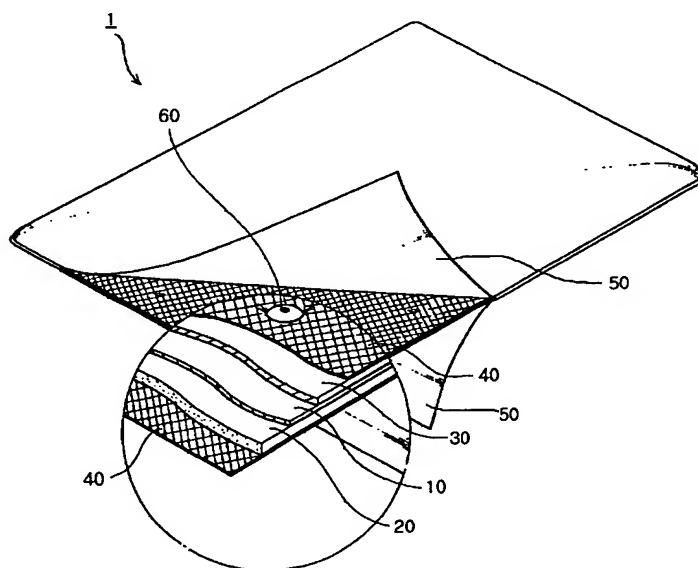
[US/US]; 727 S.Ardmore Avenue #801, Los Angeles, CA 90005 (US). **KIM, Il-Hyung** [KR/KR]; 159-43 Mook-1-dong, Choonglang-gu, 131-141 Seoul (KR). **KIM, Won-Ki** [KR/KR]; 1440-6 Pyoungri 4-dong, Seo-gu, 703-848 Daegu (KR).

(74) Agent: **SON, Won**; C & S Patent and Law Office, C-2306 Daelim Acrotel, 467-6 Dogok-dong, Gangnam-ku, 135-971 Seoul (KR).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK,

[Continued on next page]

(54) Title: **HEALTH BEDDING**

(57) Abstract: Provided is a health bedding beneficial to the human body. The health bedding comprises inner filling materials formed of stacked padding layers of talc-, magma stone- and chitosan - containing fibers, inner and outer sheaths wrapping the filling materials and a functional attachment made of jade, ceramic and magnet to the inner sheath. The health bedding of the invention comprises a plurality of layers which radiate a large amount of anions and far infrared rays and have antibacterial properties and a deodorizing function so as to promote metabolism of the human body, thereby serving especially beneficial functions to the human body.



TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*

HEALTH BEDDING

Technical Field

The present invention relates to a health bedding. In particular, the health bedding of the invention comprises a plurality of layers which radiate a large amount of anions and far infrared rays and have antibacterial properties and a deodorizing function so as to promote metabolism of the human body, thereby serving especially beneficial functions to the human body.

Background Art

As well known, various bacteria inhabit in the surrounding environment where people live. In particular, fibers in use for clothes or bedding provide amicable environments for inhabitation of bacteria and so on which are externally introduced to the fibers owing to waste products such as sweat which are secreted from the body of a user. As a result, microorganism multiplied in the fibers decomposes organic substances, thereby giving out a bad smell, damaging the fibers and inducing a fatal disease to the user.

In particular, if a bedding is contaminated with bacteria, there is every probability that a user of the bedding is exposed to a disease since the bedding directly contacts with the skin of the user for a long time while the user sleeps.

Recently, as people are paying gradually more attention

to health, they use various health materials, i.e., materials beneficial to the health such as jade, ceramics and magnets. These materials radiate far infrared rays or anions, have antibacterial properties, and promote blood circulation and metabolism, thereby promoting health.

People wear these materials which are generally provided in the form of a necklace or bracelet, buried in a hard mattress, or attached to fabrics in various techniques. Up to the present, however, the above health materials have not been directly applied to fibers of the bedding.

Disclosure of the Invention

The present invention has been made to solve the foregoing problems of the prior art and it is therefore an object of the present invention to provide a health bedding beneficial to the human body which comprises specific materials for radiating a large amount of anions and far infrared rays, activating organism and promoting metabolism such as blood circulation so as to boost the health of the human body.

According to an aspect of the invention for realizing the above object, it is provided a health bedding comprising: a talc-containing padding layer made of talc-containing polyester fibers; a magma stone-containing padding layer made of magma stone-containing polyester fibers; a chitosan-containing padding layer made of chitosan-treated natural fibers; an inner sheath made of knitted or woven fabrics

and wrapping the talc-containing padding layer, the magma stone-containing padding layer and the chitosan-containing padding layer; and an outer sheath made of knitted or woven fabrics for wrapping the inner sheath, wherein the chitosan-,
5 talc- and magma stone-containing padding layers are stacked on one another.

According to another aspect of the invention for realizing the above object, it is provided a health bedding comprising: a talc-containing padding layer made of
10 talc-containing polyester fibers; a magma stone-containing padding layer made of magma stone-containing polyester fibers; a chitosan-treated knitted/woven fabric layer which is at least surface treated with chitosan; a sheath made of knitted or woven fabrics for wrapping the talc-containing padding layer, the
15 magma stone-containing padding layer and the chitosan-treated knitted/woven fabric layer; and an attachment fixedly attached to the chitosan-treated knitted/woven fabric layer, the attachment being formed of one selected from a group including jade, ceramics and magnet or molded out of plastic containing
20 at least one selected from the group.

According to yet another aspect of the invention for realizing the above object, it is provided a health bedding comprising: a talc-containing padding layer made of talc-containing polyester fibers; a magma stone-containing
25 padding layer made of magma stone-containing polyester fibers; a first sheath made of knitted or woven fabrics for wrapping

the talc-containing padding layer and the magma stone-containing padding layer; wherein at least one of the padding layers is applied with liquid bio-ceramics at the surface thereof.

5

Brief Description of the Drawings

The above and other objects, features and advantages of the present invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

10

Fig. 1 is a partially broken perspective view of a health bedding according to a first embodiment of the invention, which is magnified in part;

Fig. 2 is a sectional view of the health bedding according to the first embodiment of the invention;

15

Fig. 3 is a partially broken perspective view of a health bedding according to a second embodiment of the invention, which is magnified in part;

Fig. 4 is a sectional view of the health bedding according to the second embodiment of the invention;

20

Fig. 5 is a partially broken perspective view of a health bedding according to a third embodiment of the invention, which is magnified in part;

Fig. 6 is a sectional view of the health bedding according to the third embodiment of the invention;

25

Fig. 7 is a partially broken perspective view of a

variation of the health bedding according to the third embodiment of the invention, which is magnified in part;

Fig. 8 is a partially broken perspective view of another variation of the health bedding according to the third embodiment of the invention, which is magnified in part; and

Figs. 9a and 9b are detailed views illustrating an attachment attached to any of health beddings according to various embodiments of the invention.

10 **Best Mode for Carrying out the Invention**

The following detailed description will present preferred embodiments of the invention in reference to the accompanying drawings.

An article such as a quilt, a pillow and a cushion available for bedding generally includes a sewn lining which is filled with an inner filling material such as wool, natural cotton, e.g., cotton fabric, sponge, duck down and other cushioning material and a sheath made of fabrics for wrapping the lining. The present invention is proposed to provide filling materials, which are filled into the lining, in the form of several layers of padding which contains health materials.

Fig. 1 is a partially broken perspective view of a health bedding 1 according to a first embodiment of the invention, which is magnified in part, and Fig. 2 is a sectional view of Fig. 1. The health bedding 1 of the invention is devised to

have several layers 10, 20 and 30 which are wrapped in inner and outer sheaths 40 and 50. The layers 10, 20 and 30 contain or are surface treated with health materials.

That is, the health bedding 1 according to the first
5 embodiment of the invention has filling materials formed by stacking the layers 10, 20 and 30. The first layer 10 is a talc-containing padding layer, and manufactured by finely pulverizing talc, mixing talc powder into polyester resin, melt-spinning talc-containing polyester resin into a
10 talc-containing polyester filament fiber, cutting the talc-containing polyester filament fiber into a certain length of staple fibers, and carding the staple fibers into a padding layer. The second layer 20 is a magma stone-containing padding layer, and manufactured by mixing magma stone powder into
15 polyester resin, melt-spinning a mixture of magma stone powder and polyester resin into a magma stone-containing polyester filament fiber, cutting the filament fiber into a certain length of staple fibers, and then carding the staple fibers into a padding layer. The third layer 30 is in the form of
20 a chitosan-containing padding layer, and manufactured by treating chitosan solution on natural fibers such as raw wool or cotton and carding the chitosan-treated natural fibers.

The layers 10, 20 and 30 of the invention having the above construction are adapted to exert functions of talc, magma
25 stone and chitosan which are contained in the fibers while maintaining unique characteristics of the fibers, and will be

described in detail as follows.

In the inner filling materials of the health bedding 1 according to the first embodiment of the invention, the talc-containing padding layer 10 will be primarily described
5 hereinafter.

In a spinning process of forming polyester fibers, the talc-containing padding layer 10 is manufactured as follows: First, talc is finely pulverized into powder. Fine talc powder is mixed into a molten raw material of polyester resin. The
10 talc-containing molten polyester resin is spun into a filament yarn. Then, the spun filament yarn is cut to a proper length to obtain staple fibers.

Since talc is an ore which radiates a large amount of far infrared rays, the polyester fibers containing talc also
15 radiate far infrared rays while showing characteristics of the polyester fibers.

Now description will be made about the magma stone-containing padding layer 20 of the inner filling materials of the health bedding according to the first
20 embodiment of the invention.

Magma stone is one of igneous rocks and consists of SiO_2 80 to 85wt%, Al_2O_3 5 to 10wt%, K_2O 2 to 5wt%, Na_2O 2 to 3wt%, CaO 1 to 2wt%, Fe_2O_3 1 to 2wt%, MgO 0.5 to 1wt%, TiO_2 0.1 to 0.5wt%, MnO 0.01 to 0.1wt% and inevitable impurities. Magma
25 stone has excellent characteristics such as absorption and decomposition of noxious substances, a deodorizing function

and antibacterial properties based upon its micro-porous structure. Magma stone also flows out affluent minerals and discharges a large amount of anions under various conditions. In particular, magma stone is beneficial to the health of the human being since it has a high emissivity of infrared rays at a wavelength of about 4 to 14 μ m, which are readily absorbed by the organism and water while promoting the physiology and growth of the human being.

In reference, cations secrete an excessive amount of serotonin and histamine in the human body to injure the health and deteriorate the ability of aerobic respiration. Unlike the cations, anions accelerate ionization rate of mineral components in blood to alkalify blood and thus purify blood and promote electrical exchange of materials in cell membranes, and on the other hand, increase the amount of gamma-globulins functioning as immune components in blood serum to enhance resistance force as well as activate blood and lymph in an autonomic nervous system.

Therefore, the magma stone-containing padding layer utilizes staple fiber spun from polyester fibers containing magma stone of such beneficial characteristics. In manufacture of the magma stone-containing polyester fibers, magma stone powder is mixed into polyester resin; magma stone-containing polyester resin is melt-spun into a filament yarn; and the filament yarn is drawn and cut.

In sequence, hereinafter description will be made about

the chitosan-containing padding layer 10 of the inner filling materials of the health bedding according to the first embodiment of the invention.

Chitosan is obtained by deacetylating chitin, which is
5 a natural product found in shells of crabs, shrimps, lobsters, cuttlefish, insects and etc. As known in the art, chitin is non-toxic and biodegradable as well as has somatological characteristics such as bio-friendliness, intercellular cementation, cultivation of biological tissue, antibacterial
10 properties, stanching action, biocompatibility.

Recently such unique characteristics of chitin and chitosan have been known and thus various attempts are being made to utilize these substances beneficial to human life. According to an example of the current attempts, these
15 substances are made into fibers, and the fibers are applied to specific regions of an article, which contact with the skin, so that the fibers provide antibacterial properties and biocompatibility to the skin.

That is, the health bedding 1 of the first embodiment
20 utilizes natural cotton, which is manufactured by solving chitosan into a solvent to prepare a chitosan solution, treating the chitosan solution on natural fibers such as wool or cotton fibers to obtain chitosan-treated natural fibers, and then carding the chitosan- treated natural fibers. The
25 chitosan- treated natural fibers and a manufacturing method thereof are disclosed in detail in Korean Laid-Open Patent

Application No. 2001-84171, filed on December 24, 2001. For reference, a chitosan-containing spun yarn and a manufacturing method thereof are also specifically disclosed in Korean Laid-Open Patent Application No. 2001-84172, filed on December 24, 2001 by the applicant of the present invention.

The natural fibers, preferably, wool fibers adopted in the health bedding of the first embodiment have a thickness of about 5 to 10 μ m and a length of about 1 to 30mm. The natural fibers have the bio-friendly characteristics such as antibacterial properties and deodorizing ability while maintaining flexibility and heat insulation ability of the wool fibers.

Next, as shown in Figs. 1 and 2, the health bedding 1 according to the first embodiment of the invention includes the talc-containing padding layer 10, the magma stone-containing padding layer 20, the chitosan-containing padding layer 30 and the inner and outer sheaths 40 and 50.

The inner and outer sheaths 40 and 50 respectively utilize knitted or woven fabrics which are widely used in bedding.

In addition to the talc-containing padding layer 10, the magma stone-containing padding layer 20 and the chitosan-containing padding layer 30 which constitute the inner filling materials, the inner sheath 40 may alternatively include other health materials such as jade, ceramics and magnet in order to promote blood circulation and metabolism. These health materials such as jade, ceramics and magnet can be directly

attached to the inner sheath 40, or via sewing or other attachment means.

As shown in Fig. 9a, an attachment 60 is prepared directly from rough jade, ceramics or magnet. Alternatively, the attachment 60 may be prepared by integrally molding finely pulverized powder of at least one of jade, ceramics and magnet together with resin and preferably plastic. The attachment 60 is wrapped in a fixing cloth 62, and fixedly attached to the inner sheath 40 by sewing a portion of the cloth 62 around the attachment 60.

Alternatively, as shown in Fig. 9b, the attachment 60 integrally has a fixing hole 60a, and a fixture 64 has a rib 64a. The rib 64a is inserted into the fixing hole 60a of the attachment 60 and directly fixed to the inner sheath 40 so that the attachment 60 can be fixedly attached to the inner sheath 40.

The attachment 60 is attached in plurality to the health bedding 1 according to the first embodiment of the invention. Preferably, the attachments 60 are uniformly distributed across the entire inner sheath 40. More preferably, the attachments 60 are concentrically arranged in a portion of the bedding contacting with the chest of a user of the bedding so as to concentrically create healthful effects to the user.

Each of the talc-containing padding layer 10, the magma stone-containing padding layer 20 and the chitosan-containing padding layer 30 in use for the health bedding 1 according to

the first embodiment of the invention can be adjusted in weight and thickness according to application and function of the health bedding. Also, the layers 10, 20 and 30 can be sequentially stacked as shown in Figs. 1 and 2.

5 As not shown in the drawings, additional fabrics may be inserted between and sewn with the padding layers 10, 20 and 30 in order to protect the padding layers 10, 20 and 30 while securely maintaining the shape thereof. The padding layers 10, 20 and 30 may be changed in their order of arrangement
10 (stackings).

Therefore, the health bedding 1 according to the first embodiment of the invention is beneficial to the human being owing to the talc-, magma stone- and chitosan-containing padding layers 10, 20 and 30 in addition to the attachment 60
15 containing jade, ceramics and magnet attached to the inner sheath 40.

Fig. 3 is a partially broken perspective view of a health bedding according to a second embodiment of the invention, which is magnified in part, and Fig. 4 is a sectional view of
20 Fig. 3, in which those components similar to those of the health bedding 1 of the first embodiment (in Figs. 1 and 2) will be designated with reference numbers increased by a hundred and schematically described.

The health bedding 100 according to the second embodiment
25 of the invention includes several layers 110, 120 and 170 which are wrapped in a sheath 150. The several layers 110, 120 and

170 contain or are surface treated with health materials.

As shown in Figs. 3 and 4, in the health bedding 100 according to the second embodiment of the invention, the layers 110, 120 and 170 wrapped in the sheath 150 are stacked in sequence. The first layer 110 is a talc-containing padding layer, and manufactured by finely pulverizing talc, mixing talc powder into polyester resin, melt-spinning talc-containing polyester resin into a talc-containing polyester filament fiber, and cutting the talc-containing polyester filament fiber into a certain length of staple fibers and carding the fibers into a padding layer. The second layer 120 is a magma stone- containing padding layer, and manufactured by mixing magma stone powder to polyester resin, melt-spinning a mixture into a magma stone-containing polyester filament fiber, cutting the filament fiber into a certain length of staple fibers, and then carding the fibers into a padding layer. The first and second layers 110 and 120 constitute inner filling materials of the bedding. The third layer 170 is in the form of a chitosan-treated knitted/woven fabric layer, which is at least surface treated with chitosan. The chitosan-treated knitted/woven fabric layer 170 is manufactured by soaking knitted or woven fabrics, preferably, cotton fabrics into a chitosan solution to contain chitosan or coating the chitosan solution on the surface of the cotton fabrics so that chitosan is applied at least to the surface of the knitted/woven fabric layer 170. The third layer 170 is in the form of a

chitosan-treated padding layer, and manufactured by coating chitosan solution on natural fibers such as wool or cotton and carding the chitosan-treated natural fiber.

In the health bedding 100 according to the second
5 embodiment of the invention, the talc-containing padding layer 110, the magma stone-containing padding layer 120 and the chitosan-treated knitted/woven fabric layer 170 are adapted to show multiple functions of talc, magma stone and chitosan which are contained therein or applied to the surface thereof
10 while adequately maintaining characteristics of the fibers and the knitted/woven fabrics. As described about the health bedding 1 according to the first embodiment, talc, magma stone and chitosan are beneficial to the human body. The talc-containing padding layer 110 and the magma
15 stone-containing padding layer 120 are manufactured in the same manner as in the health bedding 1 according to the first embodiment.

Chitosan is at least surface treated to the knitted/woven fabric layer 170 of the health bedding 100 according to the
20 second embodiment of the invention. For example, chitosan functioning beneficial to the human body is solved into solvent to obtain a chitosan solution, into which knitted/woven fabrics, preferably, cotton fabrics are soaked to contain chitosan. Alternatively, the chitosan solution is coated at least on the
25 surface of the knitted/woven fabrics, in particular, the cotton fabrics.

That is, the knitted/woven fabric layer 170 adopted in the health bedding 100 of this embodiment has bio-friendly characteristics of chitosan such as antibacterial properties and deodorizing ability since the layer 170 is at least surface
5 treated with chitosan.

Since the health bedding 100 of the second embodiment uses the single chitosan-treated knitted/woven fabric layer 170 instead of the chitosan-containing padding layer 30 and the chitosan-containing inner sheath 40 used in the bedding 1 of
10 the first embodiment (Fig. 1), the bedding is simplified in its structure. As a result, the bedding is readily attached with an attachment 160 which will be described hereinafter.

In the health bedding 100 of the second embodiment, the talc-containing padding layer 110, the magma stone-containing
15 padding layer 120 and the chitosan-treated knitted/woven fabric layer 170 are stacked and wrapped in the sheath 150. The sheath 150 adopts a typical sheath made of knitted or woven fabrics which is generally used for bedding.

In addition to the health functions created from the talc-containing padding layer 110, the magma stone-containing
20 padding layer 120 and the chitosan-treated padding layer 170 constituting the inner filling materials, the health bedding 100 of the invention may include other health materials such as jade, ceramics and magnet in order to promote blood
25 circulation and metabolism. These health materials can be directly attached to the chitosan-treated padding layer 170,

or via sewing or other attachment means.

As shown in Fig. 9a, an attachment 160 is prepared directly from rough jade, ceramics or magnet. Alternatively, the attachment 160 may be prepared by integrally molding finely pulverized powder of at least one of jade, ceramics and magnet together with resin and preferably plastic. The attachment 160 is wrapped in a fixing cloth 162, and fixedly attached to the chitosan-treated knitted/woven fabric layer 170 by sewing a portion of the cloth 162 around the attachment 160.

Alternatively, as shown in Fig. 9b, the attachment 160 integrally has a fixing hole 160a, and a fixture 164 has a rib 164a. The rib 164a is inserted into the fixing hole 160a of the attachment 160 and directly fixed to the chitosan-treated knitted/woven fabric layer 170 so that the attachment 160 can be fixedly attached to the chitosan-treated knitted/woven fabric layer 170.

Also in the health bedding 1 of this embodiment, the attachment 160 is provided in plurality. Preferably, the attachments 160 are uniformly distributed across the entire chitosan-treated knitted/woven fabric layer 170. More preferably, the attachments 160 are concentrically arranged in a portion of the bedding contacting with the chest of a user (user's body) of the bedding so as to concentrically create healthful effects to the user.

Each of the talc-containing padding layer 110, the magma stone-containing padding layer 120 and the chitosan-treated

knitted/woven fabric layer 170 in use for the health bedding 100 of this embodiment can be adjusted in weight and thickness according to application and function of the health bedding. For example, as shown in Figs. 3 and 4, this embodiment can increase the thickness of one padding layer, e.g., the padding layer 120 of the two padding layers 110 and 120 to properly maintain the heat insulation ability of the health bedding 100 since the health bedding 100 of this embodiment is decreased in number of the padding layers compared to the health bedding 1 of the first embodiment (in Figs. 1 and 2).

As not shown in the drawings, additional fabrics may be used to wrap the talc- and magma stone-containing padding layers 110 and 120 in order to protect the padding layers 110 and 120 and 30 while securely maintaining the shape thereof.

In the health bedding 100 of the second embodiment, the three layers 110, 120 and 170 wrapped in the sheath 150 may be varied in their stacked order. However, regarding that the talc- and magma stone-containing layers 110 and 120 are padding layers, the chitosan-treated knitted/woven fabric layer 170 including the cotton fabrics is preferably interposed between the talc- and magma stone-containing padding layers 110 and 120 so that the padding layers 110 and 120 do not directly contact with each other so as to maintain the shape of the padding layers 110 and 120 as well as protect the same.

Therefore, the health bedding 100 according to the second embodiment of the invention is beneficial to health owing to

the talc-, magma stone-containing padding layers 110 and 120 and the chitosan-treated padding layer 170 in addition to jade, ceramics and magnet of the attachment 160.

Fig. 5 is a partially broken perspective view of a health bedding according to a third embodiment of the invention, which is magnified in part, and Fig. 6 is a sectional view of Fig. 5, in which those components similar to those of the foregoing health beddings 1 and 100 will be designated with reference numbers increased by hundreds and schematically described.

10 The health bedding 200 according to the third embodiment of the invention includes a talc-containing padding layer 210, a magma stone-containing padding layer 220 stacked on the talc-containing padding layer 210 and a sheath 250 made of knitted or woven fabrics for wrapping the padding layers 210 and 220. The padding layers 210 and 220 serve as inner filling materials of the bedding while basically having healthful characteristics.

Liquid bio-ceramics is applied to at least one of the talc- and magma stone-containing padding layers 210 and 220 which are stacked on each other in the health bedding 200 of this embodiment.

That is, as shown in Figs. 5 and 6, the health bedding 200 of the third embodiment uses the padding layers 210 and 220 used as the inner filling materials and wrapped in the sheath 250 made of the knitted or woven fabrics, e.g., cotton fabrics, in which the padding layers 210 and 220 contain talc and magma

stone beneficial to the human body. In particular, liquid (ionized) bio-ceramics is applied to the surface of at least one of the talc- and magma stone - containing padding layers 210 and 220.

5 In the health bedding 200 of this embodiment, the above liquid bio-ceramics has efficacies beneficial to the human body. Examples of the beneficial efficacies may activate water, promote activation of body cells, and raise the temperature of subcutis to boost expansion of capillary vessels and blood
10 circulation, thereby accelerating metabolism of the human body.

The above-mentioned liquid bio-ceramics is well known, and applied to at least one of the padding layers 210 and 220 of the health bedding 200 of this embodiment. At least one
15 of the talc-containing padding layer 210 and the magma stone-containing padding layer 220 is soaked into liquid bio-ceramics, and then dewatered and dried to contain bio-ceramics components. Alternatively, liquid bio-ceramics is sprayed to the surface of the layers 210 and 220.

20 Therefore, the health bedding 200 of the invention contains liquid bio-ceramics components in addition to the talc and magma stone components which generate far infrared rays and anions, thereby providing more beneficial functions to the human body.

25 Next, Fig. 7 is a partially broken perspective view of a health bedding 200a, i.e., a variation of the third embodiment

of the invention, which is magnified in part. The health bedding 200a further comprises a second or inner sheath 240 within a sheath 250 for wrapping talc- and magma stone-containing padding layers 210 and 220 as shown in Figs. 5 and 6. The inner sheath 240 stably maintains the padding layers 210 and 220 in shape while enhancing the durability of the health bedding.

In addition to the padding layers 210 and 220, an attachment can be fixedly attached to the inner sheath 240. The attachment 260 is formed of one selected from a group including jade, ceramics and magnet which are known to perform beneficial functions to the human body. Also, the attachment 260 may be molded out of plastic containing at least one selected from the group including jade, ceramics and magnet.

As shown in Fig. 7, the health bedding 200a of this embodiment further comprises a chitosan-containing padding layer 230 used in the health bedding 1 shown in Fig. 1. The chitosan-containing padding layer 230 serves as a filling material of the bedding within the inner sheath 240.

Therefore, the health bedding 200a of this embodiment further comprises the attachment 260 containing health materials such as jade, ceramics and magnet and the chitosan-containing padding layer 230 formed of natural fibers treated with chitosan in addition to the talc- and magma stone-containing padding 210 and 220, in which liquid bio-ceramics is applied to at least one of the layers 210 and

220, thereby providing functions beneficial to the human body.

The health bedding 200a of this embodiment preferably stacks the talc-containing padding layer 210, the magma stone-containing padding layer 220 and the additional
5 chitosan-containing padding layer 230 in their order within the inner sheath 240 made of knitted or woven fabrics to maintain the layers 210, 220 and 230 in shape as shown in Fig. 7. Alternatively, the inner sheath 240 may be stacked between the padding layers 210 to 230 to prevent them from tangling.

10 Fig. 8 is a partially broken perspective view of a health bedding 200b, i.e., another variation of the third embodiment of the invention, which is magnified in part. The health bedding 200b of this embodiment comprises talc- and magma stone-containing padding layers 210 and 220 basically showing
15 healthful characteristics and an outer sheath 250 made of knitted or woven fabrics for wrapping the padding layers 210 and 220. Liquid bio-ceramics is applied to the surface of at least one of the padding layers 210 and 220. The health bedding 200b also comprises a chitosan-treated knitted/woven fabric
20 layer 270 instead of the inner sheath 240 and the chitosan-containing padding layer 230 shown in Fig. 7. The knitted/woven fabric layer 270 is at least surface treated with chitosan, and has attachments 260 attached thereto.

That is, the health bedding 200b of this embodiment adopts
25 the chitosan-treated knitted/woven fabric layers 270 made of knitted/woven fabrics, for example, cotton fabrics

surface-treated with chitosan to maintain biofriendly characteristics of chitosan such as antibacterial properties as well as attaches the attachments 260 to the chitosan-treated knitted/woven fabric layer 270.

5 The chitosan-treated knitted/woven fabric layer 270 is manufactured by solving chitosan into a solvent, soaking knitted/woven fabrics such as cotton fabrics into a chitosan solution to contain chitosan, or spraying the chitosan solution onto the surface of the knitted/woven fabrics as described
10 above in respect to the health bedding 100 shown in Fig. 3.

 In the health bedding 200b of this embodiment, it is most preferred that the chitosan-treated knitted/woven layer 270 having the attachments 260 fixed thereto is stacked between the talc-containing padding layer 210 and the magma stone-
15 containing padding layer 220 to separate the padding layers 210 and 220 from each other thereby improving the shape maintaining ability thereof.

 As shown in Figs. 7 and 8, the health beddings 200a and 200b in the above embodiments may adjust the weight or thickness
20 of each of the padding layers 210 to 230 functioning as the inner filling materials of the bedding, the outer and inner sheaths 250 and 240 made of knitted or woven fabrics and the chitosan-treated knitted/woven fabric layer 270 according to application and function. Also, the layers 210 to 250 and 270
25 may be changed in their stacked order.

 Figs. 9a and 9b illustrate that an attachment made of jade,

ceramic and magnet can be attached to the inner sheath 240 and the chitosan-treated knitted/woven fabric layer 270 used in the health beddings 200a and 200b.

As shown in Fig. 9a, the attachment 260 is prepared
5 directly from rough jade, ceramics or magnet. Alternatively, the attachment 260 may be prepared by integrally molding one of finely pulverized powders of jade, ceramics, magnet or mixture thereof together with resin and preferably plastic. The attachment 260 is wrapped in a fixing cloth 262 and fixedly
10 attached to the inner sheath 240 and the chitosan-treated knitted/woven fabric layer 270 by sewing portions of the fixing cloth 262 around the attachment 260.

Alternatively, as shown in Fig. 9b, the attachment 260 integrally has a fixing hole 260a, and a fixture 264 has a rib
15 264a. The rib 264a is inserted into the fixing hole 260a of the attachment 260 and directly fixed to the inner sheath 40 so that the attachment 260 can be fixedly attached to the inner sheath 240 and the chitosan-treated knitted/woven fabric layer 270.

20 As in the foregoing health beddings 1 and 100, a plurality of attachments 260 may be uniformly distributed across entire portions of the inner sheath 240 made of knitted or woven fabrics or the chitosan-treated knitted/wove fabric layers 270. More preferably, the attachments 260 are concentrically arranged
25 in a portion of the bedding contacting with the chest of a user of the bedding so as to concentrically create healthful effects

to the user.

According to the foregoing the health beddings 200, 200a and 200b, liquid bio-ceramics is treated to the talc- and magma stone containing padding layers 210 and 220, the chitosan-
5 containing padding layer 230 made of natural fibers treated with chitosan or the chitosan-treated knitted/woven fabric layer 270 is selectively provided, and the attachments 260 formed of jade, ceramics, magnet and the like are attached to the inner sheath 240 and the chitosan-treated knitted/woven
10 fabric layer 270. As a result, the health beddings 200, 200a and 200b can provide more beneficial functions to the human body.

Industrial Applicability

15 According to the health bedding of the invention as set forth above, the polyester fibers provide fabric characteristics, chitosan provides bio-friendly characteristics of such as antibacterial properties and deodorizing function, talc and magma stone radiate far infrared
20 rays and anions and have antibacterial effects, activation of physiology and growth, and liquid bio-ceramics promotes metabolism of the body so as to achieve advantageous and practical effects which further boost the health.

Although the preferred embodiments of the present
25 invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications,

additions and substitutions can be made without departing from the scope and spirit of the invention as defined in the accompanying claims.

Claims

1. A health bedding comprising:
 - a talc-containing padding layer 10 made of talc-containing polyester fibers;
 - 5 a magma stone-containing padding layer 20 made of magma stone-containing polyester fibers;
 - a chitosan-containing padding layer 30 made of chitosan-coated natural fibers;
 - an inner sheath 40 made of knitted or woven fabrics and
 - 10 wrapping the talc-containing padding layer, the magma stone-containing padding layer and the chitosan-containing padding layer; and
 - an outer sheath 50 made of knitted or woven fabrics for wrapping the inner sheath 40,
 - 15 wherein the chitosan-, talc- and magma stone-containing padding layers are stacked on one another.
2. A health bedding in accordance with claim 1, further comprising an attachment 60 fixedly attached to the inner
- 20 sheath 40, the attachment 60 being formed of one selected from a group including jade, ceramics and magnet or molded out of plastic containing at least one selected from the group.
3. A health bedding in accordance with claim 2, wherein
- 25 the attachment 60 is attached to the inner sheath 40 by sewing a portion of a fixing cloth 62 around the attachment 60 or via

a fixture 64.

4. A health bedding comprising:

a talc-containing padding layer 110 made of
5 talc-containing polyester fibers;

a magma stone-containing padding layer 120 made of magma
stone-containing polyester fibers;

a chitosan-treated knitted/woven fabric layer 170 which
is at least surface treated with chitosan;

10 a sheath 150 made of knitted or woven fabrics for wrapping
the talc-containing padding layer 110, the magma
stone-containing padding layer 120 and the chitosan-treated
knitted/woven fabric layer 170; and

an attachment 160 fixedly attached to the
15 chitosan-treated knitted/woven fabric layer 170, the
attachment 160 being formed of one selected from a group
including jade, ceramics and magnet or molded out of plastic
containing at least one selected from the group.

20 5. A health bedding in accordance with claim 4, wherein
the chitosan-treated knitted/woven fabric layer 170 is
interposed between the talc-containing padding layer 110 and
the magma stone-containing padding layer 120.

25 6. A health bedding in accordance with claim 4, wherein
the chitosan-treated knitted/woven fabric layer 170 is made

of cotton fabrics.

7. A health bedding in accordance with claim 4, wherein the attachment 160 is attached to the chitosan-treated knitted/woven fabric layer 170 by sewing a portion of a fixing cloth 162 around the attachment 160 or via a fixture 164.

8. A health bedding comprising:

a talc-containing padding layer 210 made of talc-containing polyester fibers;

a magma stone-containing padding layer 220 made of magma stone-containing polyester fibers;

a first sheath 250 made of knitted or woven fabrics for wrapping the talc-containing padding layer 210 and the magma stone-containing padding layer 220;

wherein at least one of the padding layers 210 and 220 is applied with liquid bio-ceramics at the surface thereof.

9. A health bedding in accordance with claim 8, further comprising:

a second sheath 240 arranged within the first sheath 250 for wrapping the talc- and magma stone-containing padding layers 210 and 220, the second sheath 240 being made of knitted or woven fabrics; and

an attachment 260 fixedly attached to the second sheath 240, the attachment 260 being formed of one selected from a

group including jade, ceramics and magnet or molded out of plastic containing at least one selected from the group.

10. A health bedding in accordance with claim 9, further
5 comprising a chitosan-containing padding layer 230 made of natural fabrics coated with chitosan, wherein the chitosan-containing padding layer 230 is wrapped in the second sheath.

10 11. A health bedding in accordance with claim 8, further comprising:

a knitted/woven fabric layer 270 which is at least surface treated with chitosan; and

an attachment 260 fixedly attached to the knitted/woven
15 fabric layer 270, the attachment 260 being formed of one selected from a group including jade, ceramics and magnet or molded out of plastic containing at least one selected from the group.

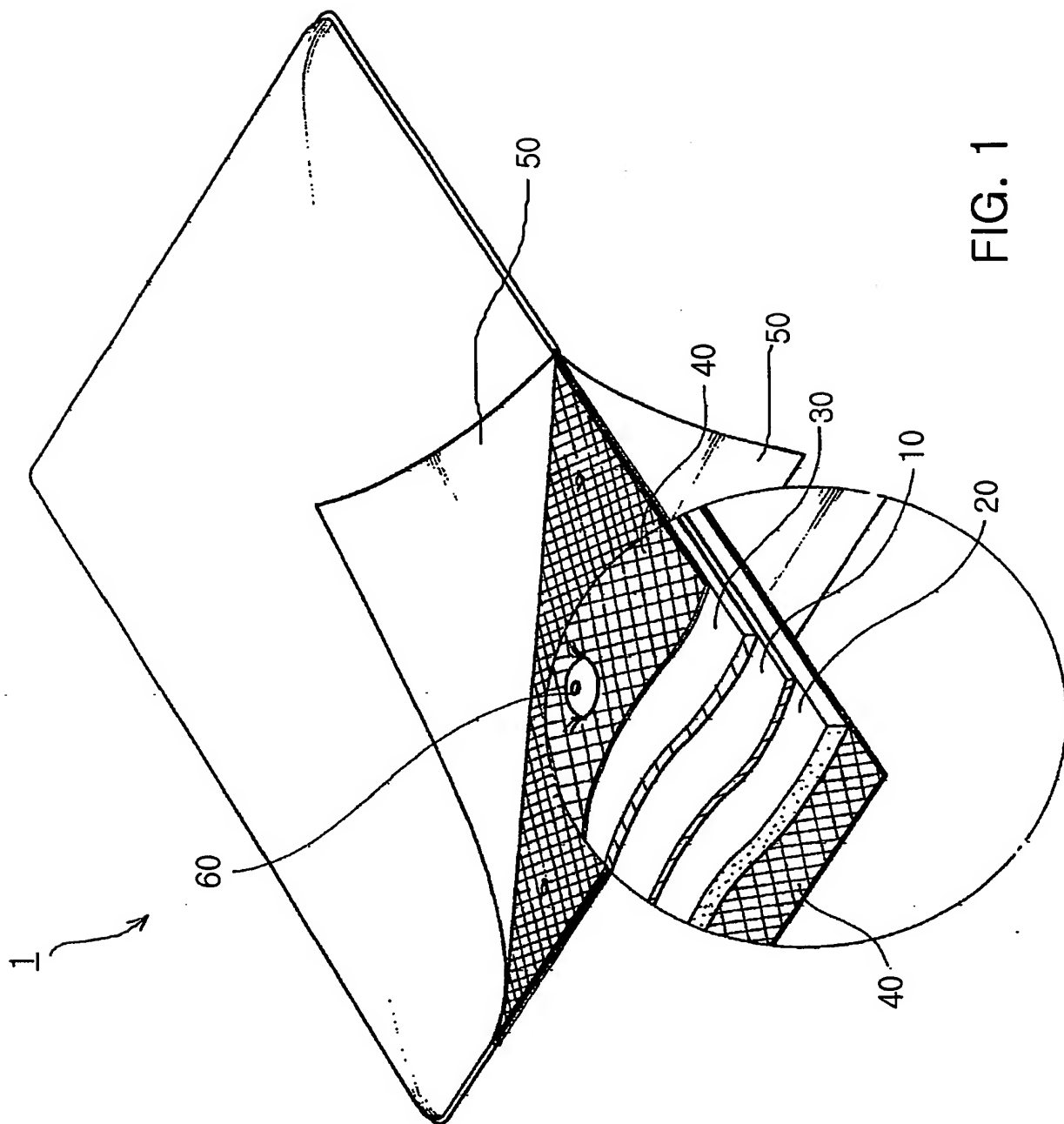
20 12. A health bedding in accordance with claim 11, wherein the chitosan-treated knitted/woven layer 270 is interposed between the talc-containing padding layer 210 and the magma stone-containing padding layer 220.

25 13. A health bedding in accordance with claim 11, wherein the chitosan-treated knitted/woven fabric layer 270 is made

of cotton fabrics.

14. A health bedding in accordance with claim 9 or 11,
wherein the attachment 260 is attached to the second sheath
5 240 or the chitosan-treated knitted/woven fabric layer 270 by
sewing a portion of a fixing cloth 262 around the attachment
260 or via a fixture 264.

1/10



2/10

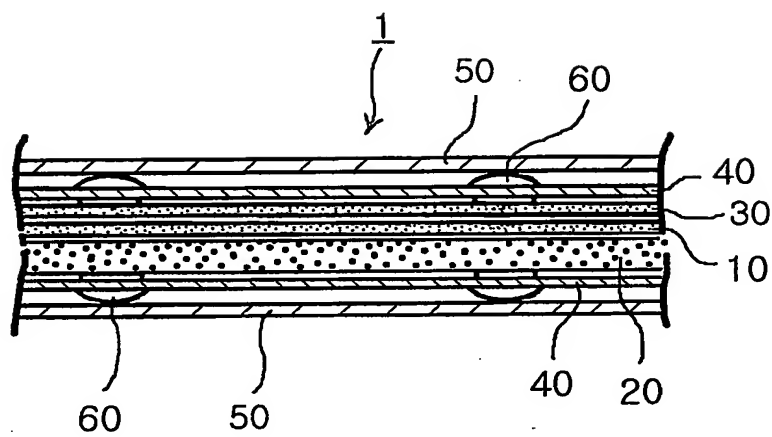


FIG. 2

3/10

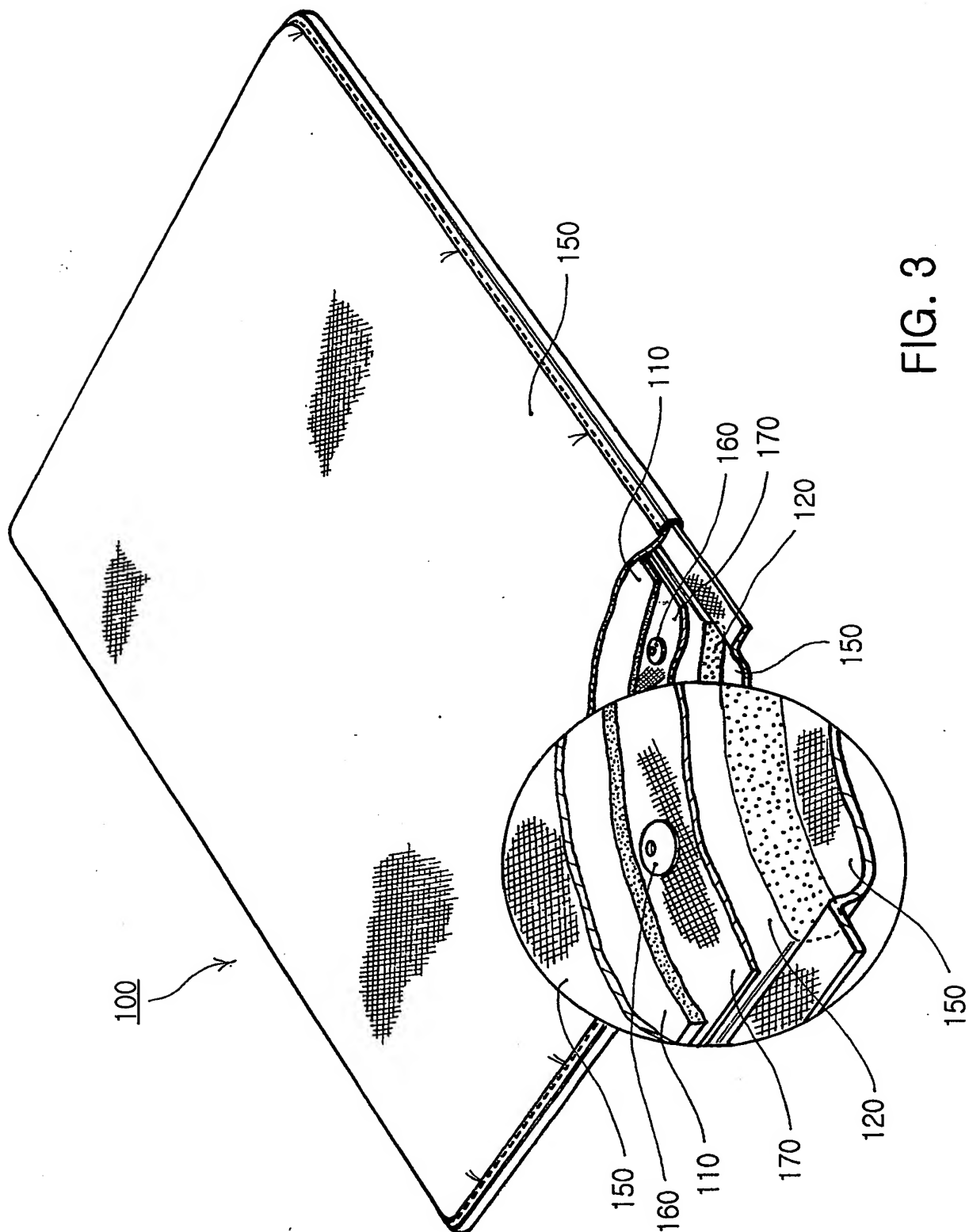


FIG. 3

4/10

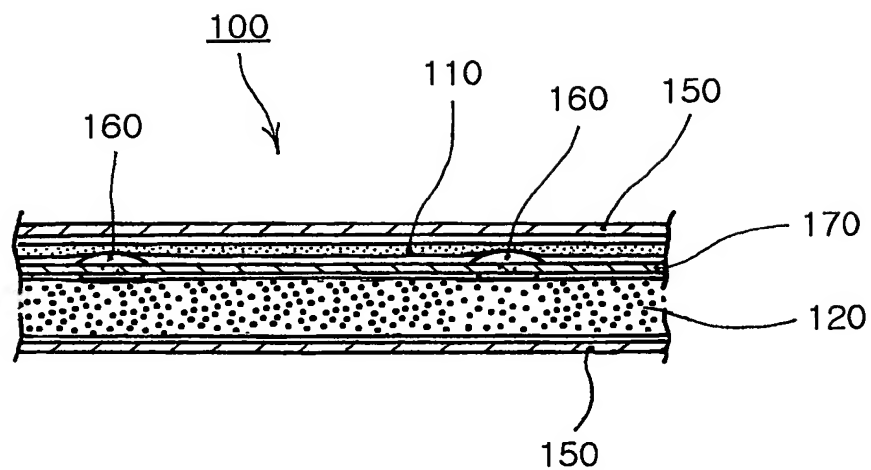


FIG. 4

5/10

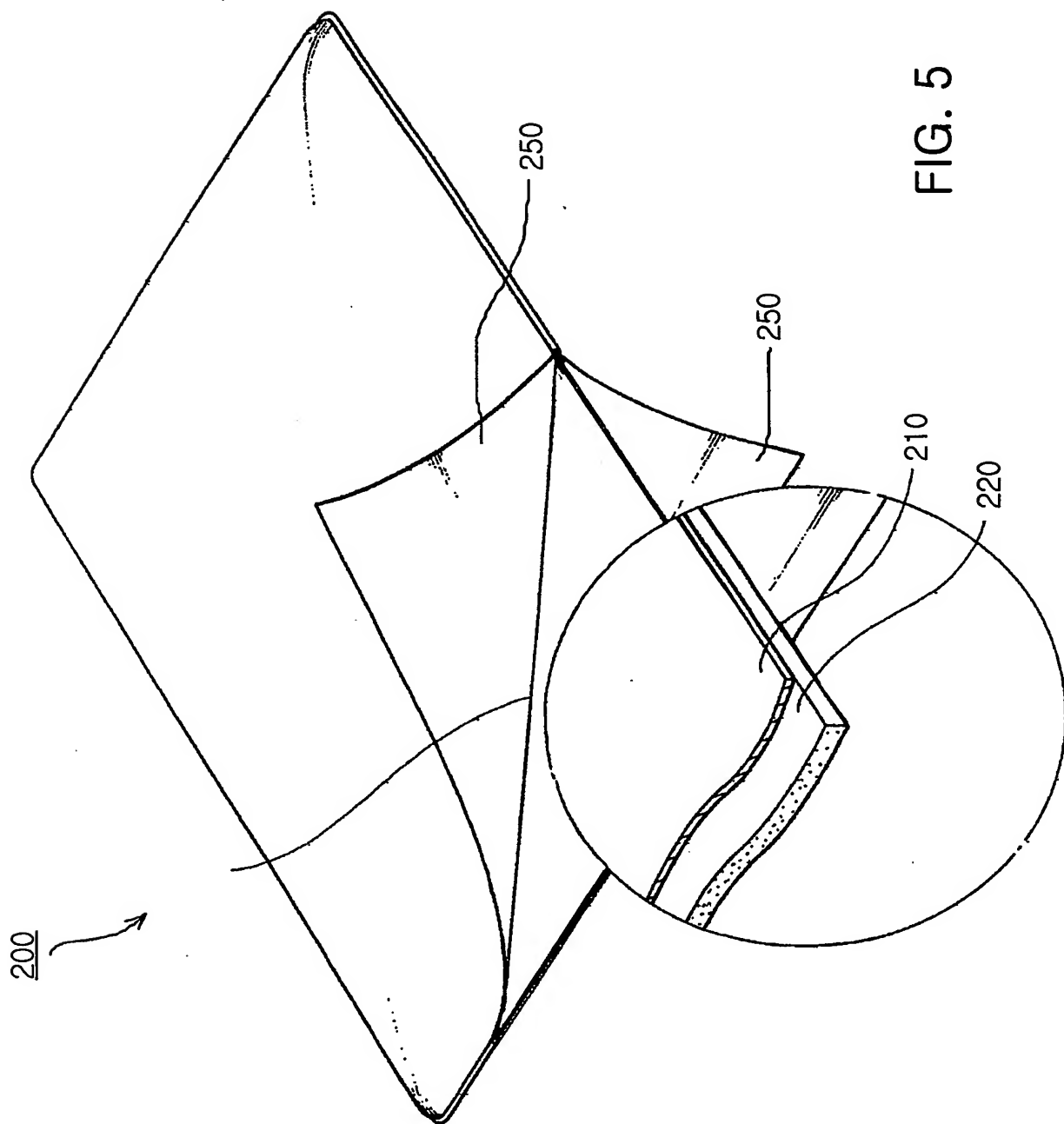


FIG. 5

6/10

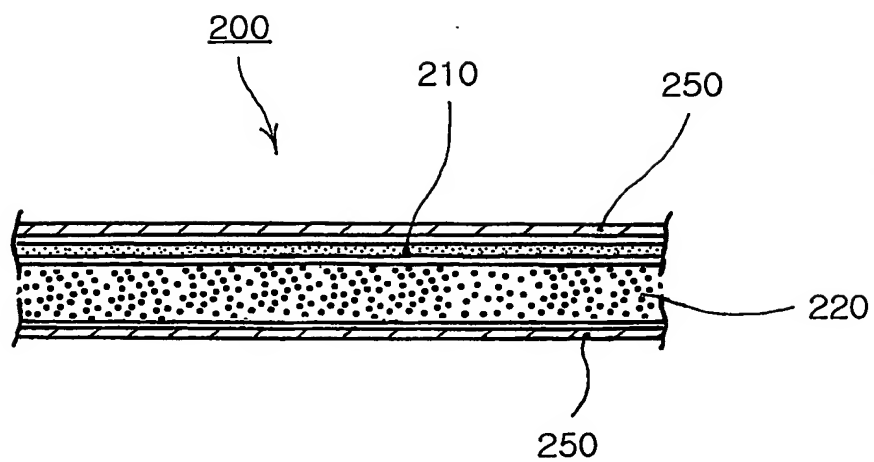


FIG. 6

7/10

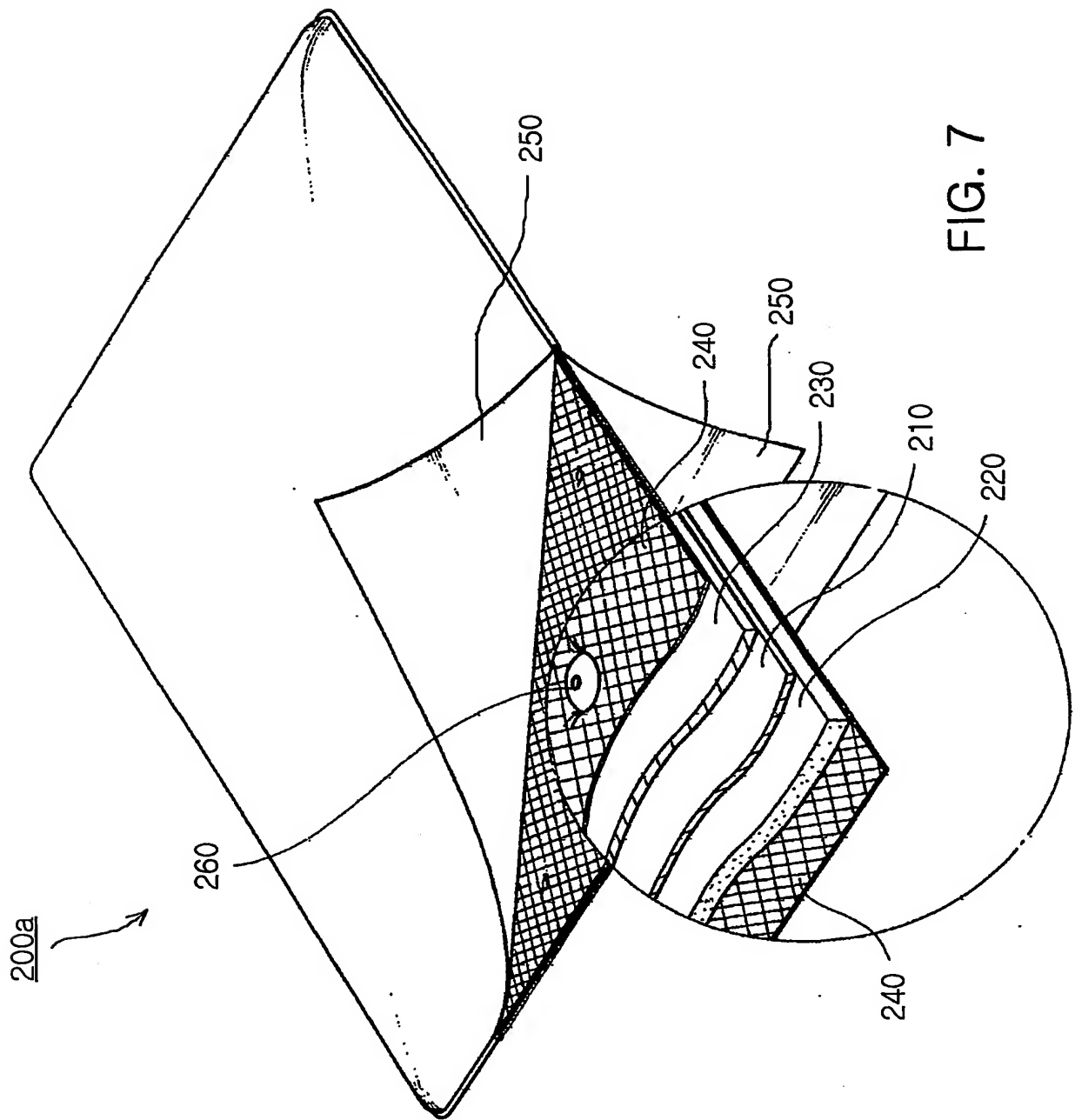


FIG. 7

8/10

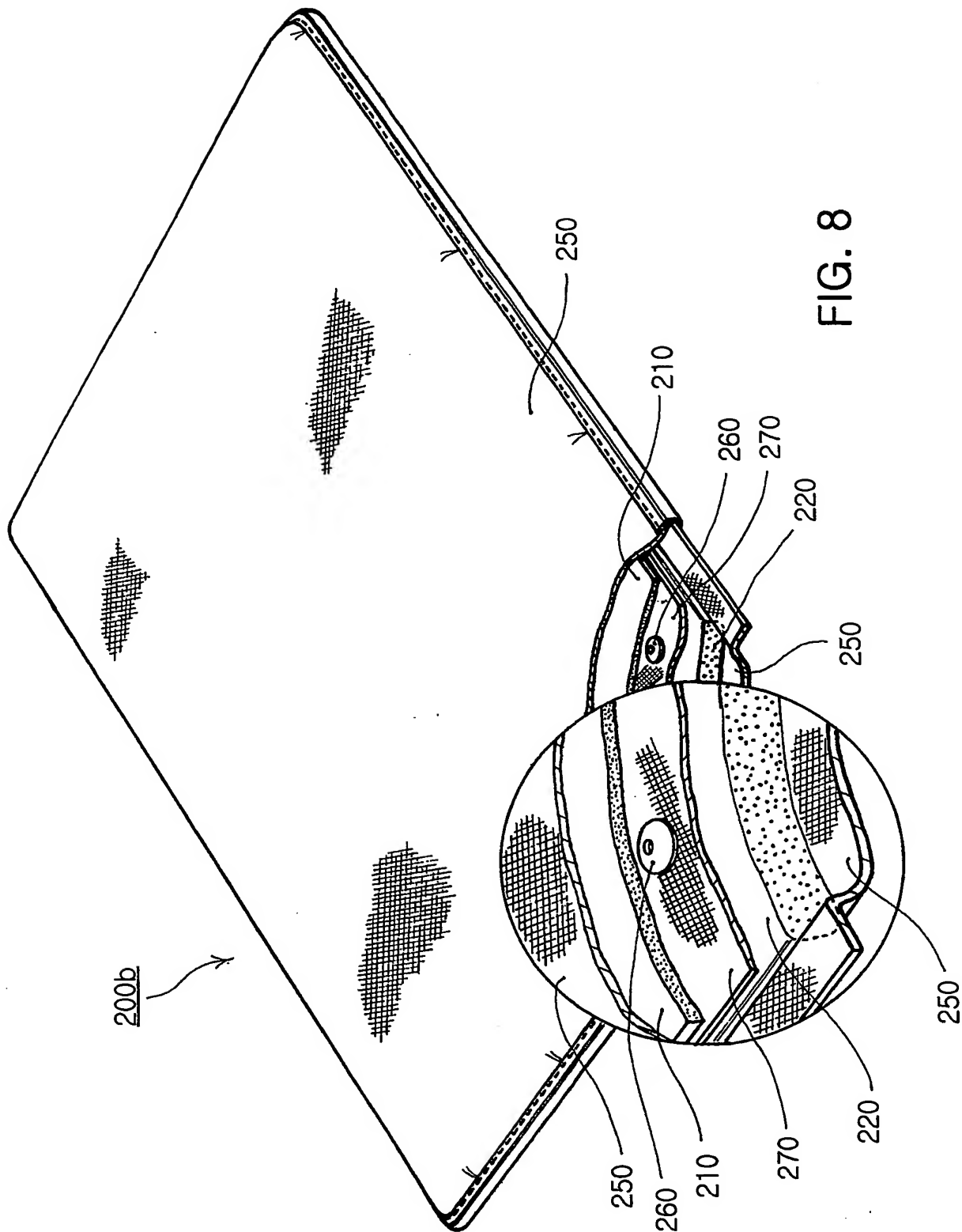


FIG. 8

9/10

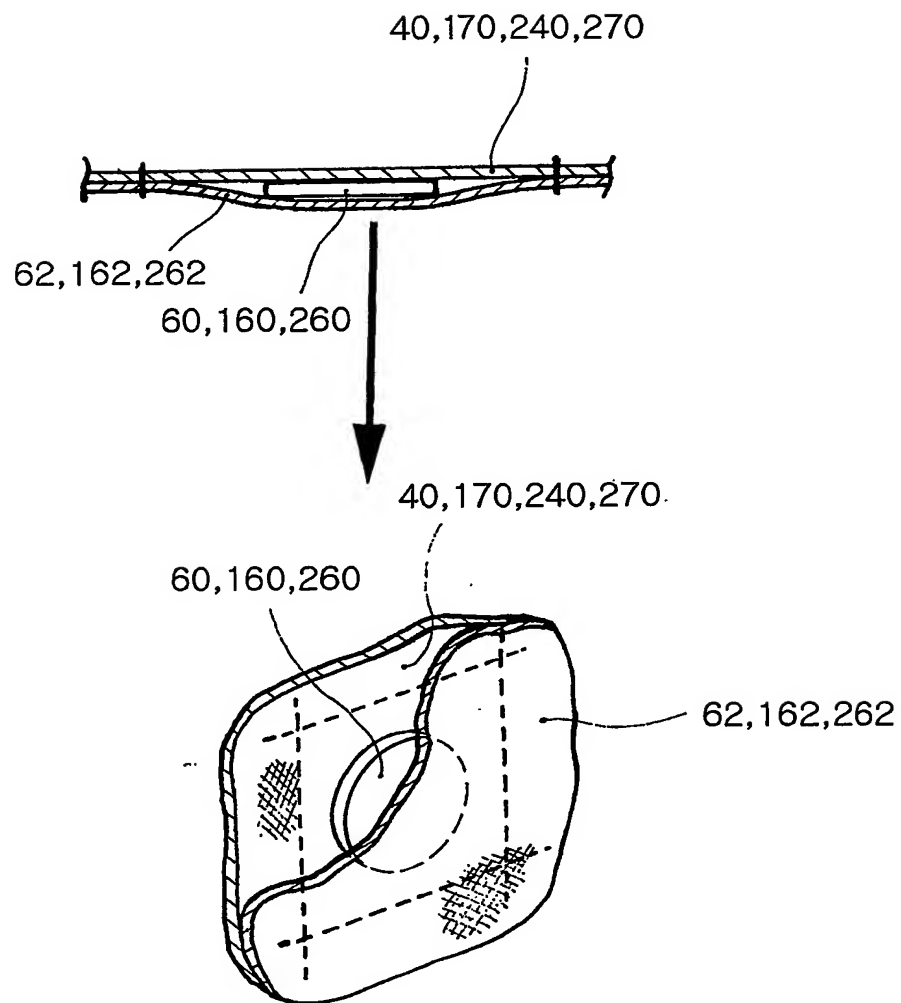


FIG. 9a

10/10

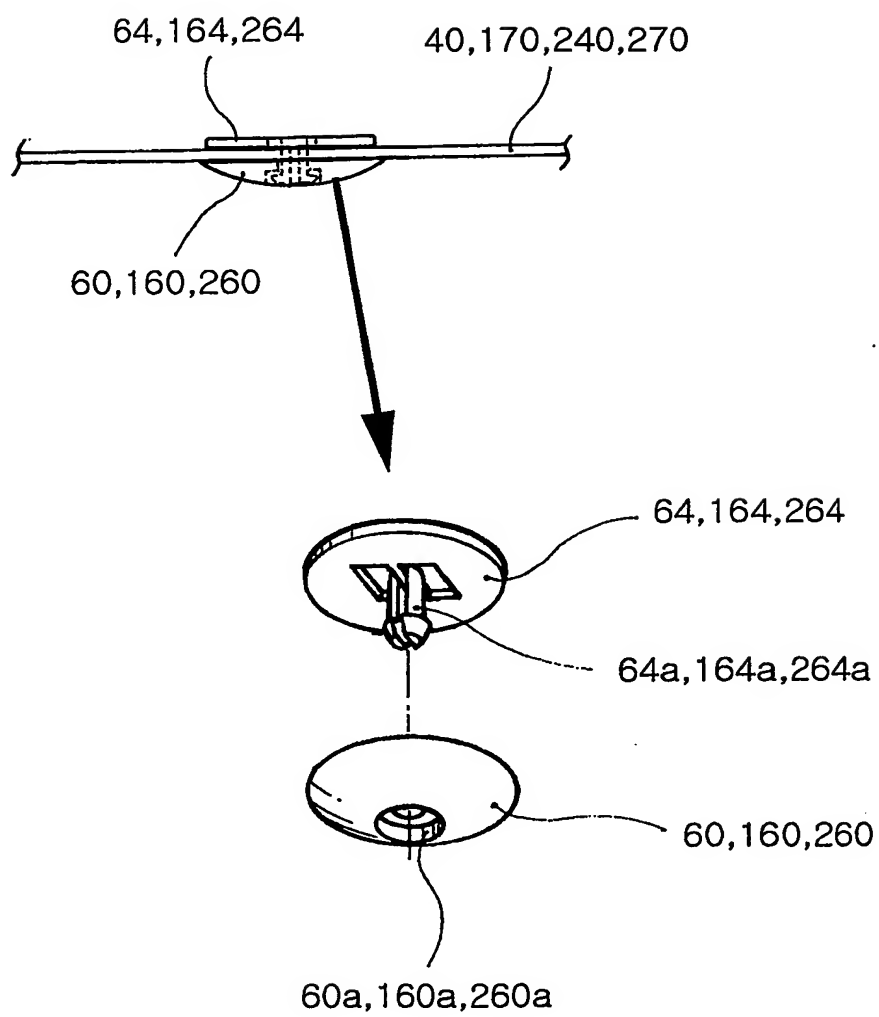


FIG. 9b

INTERNATIONAL SEARCH REPORT

Application No.
PCT/KR02/02426

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 A47G 9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 A47G ; D06M; C08L; A01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility Models and Applications for Utility Models since 1975; Korean Patents and Applications for Inventions since 1975, Japanese Utility Models and Applications for Utility Models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

New Patents and Utility Models Search System(KIPO): "chitin", "chitosan", "tarc", "fiber", "textile", "bedding"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6153209 A (Proctor & Gamble Company) 28.11.2000 see the entire document, especially claim 22	1-14
A	JP 07-102114 A (Teijin Ltd.) 18.04.1995 see the entire document	1-14
A	KR 2001-0058616 A (Toraysaehan Inc.) 06.07.2001 see the claims 1-5	1-14

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

09 APRIL 2003 (09.04.2003)

Date of mailing of the international search report

09 APRIL 2003 (09.04.2003)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

WOO, Dong Gi

Telephone No. 82-42-481-5408



INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/KR02/02426

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US6153209A	28.11.2000	AU7595600A BR0014369A EP1216020A1 N020021529A TR200200814T2 US6153209A W00122933A1	30.04.2001 25.06.2002 26.06.2002 28.05.2002 22.07.2002 28.11.2000 05.04.2001
JP07-102114A	18.04.1995	NONE	
KR2001-0058616A	06.07.2001	NONE	